

MARKED UP VERSION OF AMENDED CLAIMS

1. (Once Amended) A cyclone separator apparatus for separating solids from a gas-solid containing feed resulting in a gas-rich stream, [the] said separator comprising an upright hollow circular housing comprising:
 - an inner surface;
 - an outer surface; and,
 - a vertical axis;fluidly connected to a dipleg [having at its lower end a flapper valve, wherein the dipleg has a lower part,], said dipleg comprising:
 - an upper part; and,
 - a lower part comprising a lower end comprising a flapper valve;wherein the [which] lower part of the dipleg has a diameter which increases [from the top of] along the lower part to the lower end of the dipleg.
2. (Once Amended) [Apparatus] The apparatus [according to] of claim 1, [wherein] in which the diameter of the lower part increases continuously [and] such that [the] an angle formed by the inner surface of the lower part of the dipleg and the vertical axis is between about 0.2° and about 4°.
3. (Once Amended)) [Apparatus] The apparatus [according to] of claim 1, [wherein] in which the angle is between about 0.5° and about 2°.
4. (Once Amended) [Retrofitting] A process for retrofitting an existing cyclone separator apparatus for separating solids from a gas-solid containing feed resulting in a gas-rich stream, [the] said separator comprising a dipleg [having a constant diameter] comprising:
 - an upper part; and,
 - a lower part comprising a lower end comprising a flapper valve;wherein the lower part of the dipleg has a diameter which remains constant along the lower part to the lower end of the dipleg;
 - said process comprising:
 - modifying the dipleg such that the diameter of the dipleg continuously increases along the lower part to the lower end [wherein the lower part of the existing dipleg is modified in that this lower part has a diameter which

continuously increases from the top of the lower part to the lower end of the dipleg resulting in a cyclone separator according to any one of claims 1-3].

5. (Once Amended) [Process to separate gas from solids making use of the apparatus as described in anyone of claims 1-3] A process for separating gas from solids comprising:

feeding a gas-solid containing stream into a cyclone separator apparatus, said apparatus comprising:

an upright hollow circular housing comprising:

an inner surface;

an outer surface; and,

a vertical axis;

fluidly connected to a dipleg, said dipleg comprising:

an upper part; and,

a lower part comprising a lower end comprising a flapper valve;

wherein the lower part of the dipleg has a diameter which increases along the lower part to the lower end of the dipleg;

wherein a pressure difference exists between the cyclone housing and just beneath the [outlet opening] lower end of the dipleg of between about 1000 Pa and about 40000 Pa;

the solids have a diameter ranging between about 1×10^{-6} m and about 200×10^{-6} m; and,

[wherein] the solids [are] comprise fluid catalytic catalysts.